This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): Process for heat treatment of a hydrocarbon feedstock in a furnace that comprises at least one radiation chamber with radiant walls, comprising at least one essentially vertical exchange tube bundle inside of which circulates the hydrocarbon feedstock to be treated, whereby said radiant walls are equipped with catalytic radiant burners with porous panels that are typically used in the form of essentially horizontal or optionally vertical bands, distributed over several levels in the vertical direction, or respectively in the horizontal direction, whereby these catalytic burners generate a mean temperature Tm of the radiant walls of between 900°C and 1300°C, characterized in that ratio R of the cumulative surface of the porous panels to the cumulative surface of the radiant walls is at least equal to 0.3 and in that this ratio R is high enough and mean temperature Tm is low enough so that the NOx level in the smoke at the outlet of the furnace is at most equal to 100 mg/NM^3.

Claim 2 (Original): Process according to claim 1, wherein ratio R of the cumulative surface area of the porous panels to the cumulative surface area of the radiant walls is at least equal to 0.3 and wherein this ratio R is high enough, and mean temperature Tm is low enough, for the NOx level in the smoke at the furnace outlet to be at most equal to 10 mg/NM^3.

Claim 3 (Currently Amended): ~~Process~~ A process according to ~~one of claims 1 and 2~~ claim 1, wherein Tm is between 950°C and 1250°C, and R is between 0.5 and 1.

Claim 4 (Currently Amended): ~~Process~~ A process according to ~~one of claims 1 to 3~~ claim 1, wherein each radiant burner ~~consists of~~ comprises a parallelepipedic box that has one of its faces placed against one of the lateral walls of the furnace, whereby the face opposite to the preceding one ~~consists of~~ comprises a porous panel whose inside face communicates with a fuel supply chamber, and the outside radiative face transfers its heat to the tube bundle essentially by radiation.

Claim 5 (Currently Amended): ~~Process~~ A process according to ~~one of claims 1 to 4~~ claim 4, wherein the porous panel exhibits a pore size of between 0.1 and 0.95~~, and preferably between 0.3 and 0.8~~.

Claim 6 (Currently Amended): ~~Process~~ A process according to ~~any of claims 1 to 5~~ claim 4, wherein the combustion of the air-fuel mixture that is used in the supply of catalytic radiant burners takes place in a catalytic zone that is located inside the porous panel, according to a so-called "radiant" combustion mode.

Claim 7 (Currently Amended): ~~Process~~ A process according to ~~any of claims 1 to 6~~ claim 4, wherein the combustion of the air-fuel mixture that is used in the supply of catalytic radiant burners takes place over the outside surface of the porous panel according to a so-called "blue flame" method.

Claim 8 (Currently Amended): ~~Process~~ A process according to ~~any of claims 1 to 7~~ claim 1, wherein at each catalytic radiant burner, the ~~so-called~~ "radiant" combustion mode is used in a heat flow range that goes from 10 to 600 ~~kW/m*2 and preferably from 100 to 300 kW/m*2~~ kW/square meter.

Claim 9 (Currently Amended): ~~Process~~ A process according to ~~any of claims 1 to 8 for~~ claim 1, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 10 (Currently Amended): ~~Process~~ A process according to ~~any of claims 1 to 8 for vaporeforming~~ claim 1, comprising stream reforming of hydrocarbons that have essentially less than 12 carbon atoms for the production of synthesis gas.

Claim 11 (New): A process according to claim 4, wherein the porous panel exhibits a pore size of between 0.3 and 0.8.

Claim 12 (New): A process according to claim 1, wherein at each catalytic radiant burner, the ~~so-called~~ "radiant" combustion mode is used in a heat flow range that goes from 100 to 300 kW/square meter.

Claim 13 (New): A process according to claim 2, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 14 (New): A process according to claim 3, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 15 (New): A process according to claim 4, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 16 (New): A process according to claim 5, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 17 (New): A process according to claim 6, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 18 (New): A process according to claim 7, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.

Claim 19 (New): A process according to claim 8, comprising steam-cracking hydrocarbons for the production of ethylene and propylene.